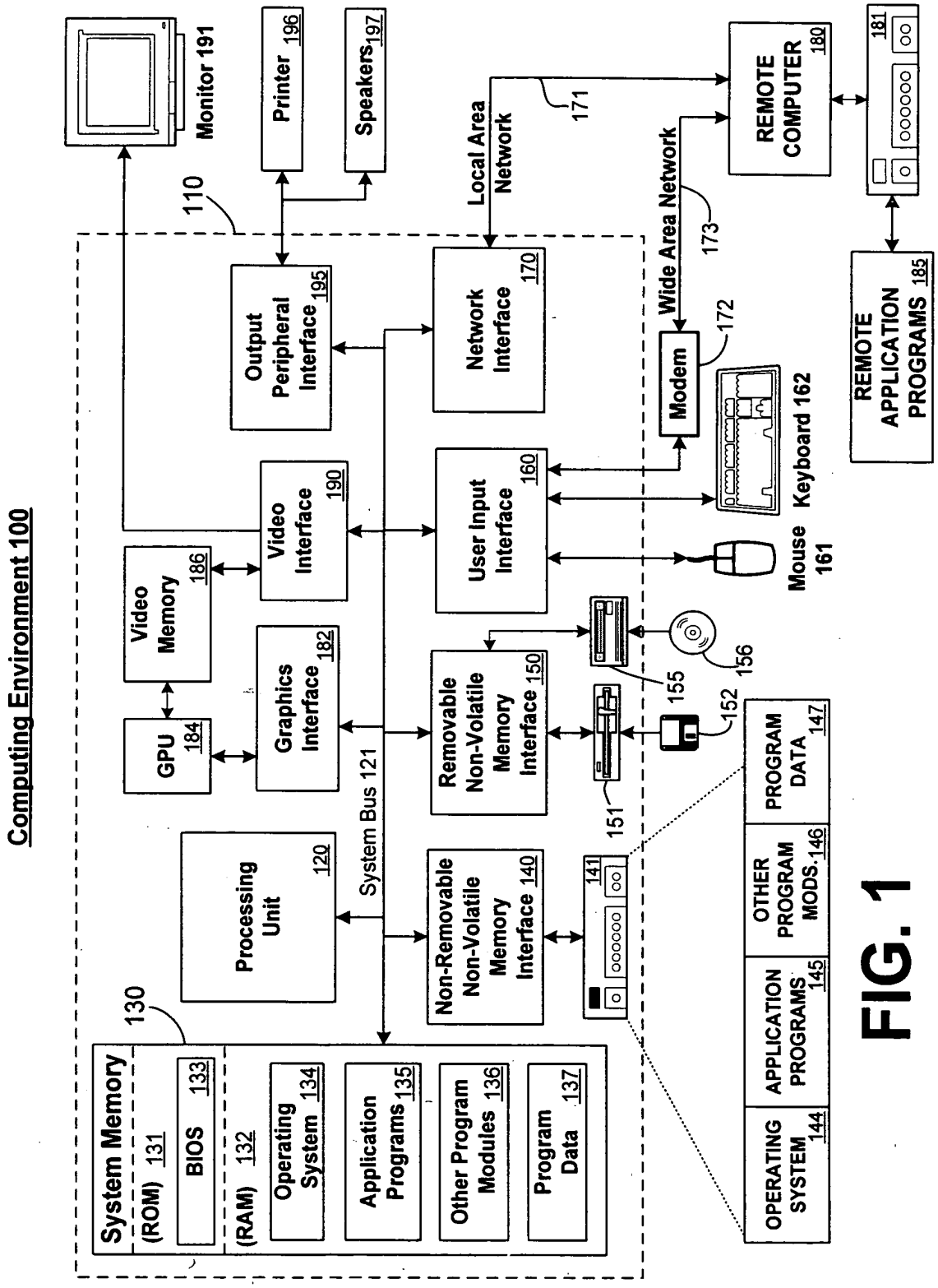
Computing Environment 100
110
Monitor 191
Printer 196
Speakers 197
Local Area Network
171
REMOTE COMPUTER 180
181
Wide Area Network
173
Output Peripheral Interface 195
Network Interface 170
Modem 172
REMOTE APPLICATION PROGRAMS 185
Video Memory 186
Video Interface 190
User Input Interface 160
Keyboard 162
Mouse 161
GPU 184
Graphics Interface 182
Removable Non-Volatile Memory Interface 150
155
156
152
151
System Bus 121
Processing Unit 120
Non-Removable Non-Volatile Memory Interface 140
141
PROGRAM DATA 147
OTHER PROGRAM MODS. 146
APPLICATION PROGRAMS 145
OPERATING SYSTEM 144
130
System Memory
(ROM) 131
BIOS 133
(RAM) 132
Operating System 134
Application Programs 135
Other Program Modules 136
Program Data 137

FIG. 1

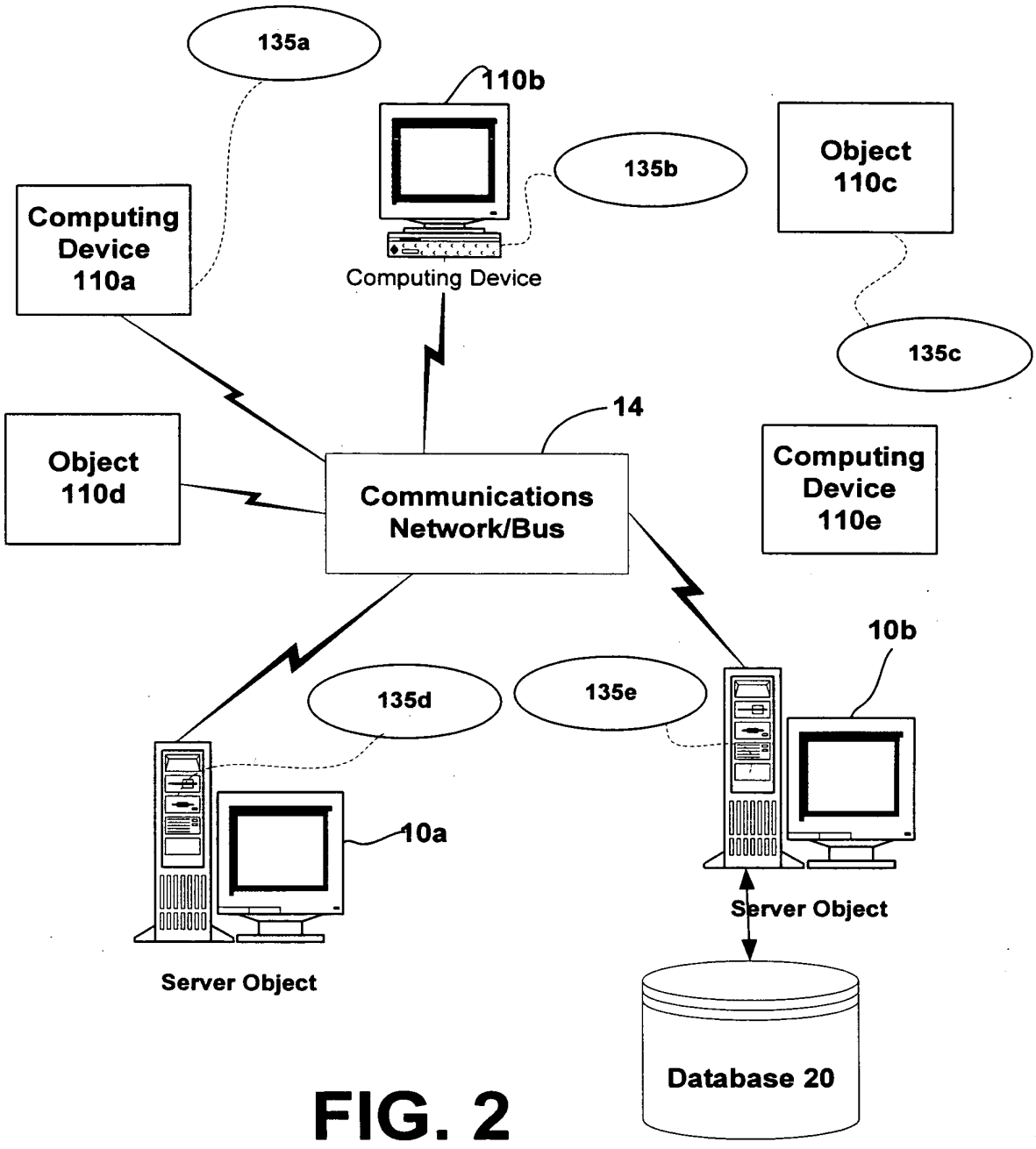
135a
110b
135b
Object
110c
Computing
Device
110a
Computing Device
135c
14
Object
110d
Communications
Network/Bus
Computing
Device
110e
10b
135d
135e
10a
Server Object
Server Object
Database 20

FIG. 2

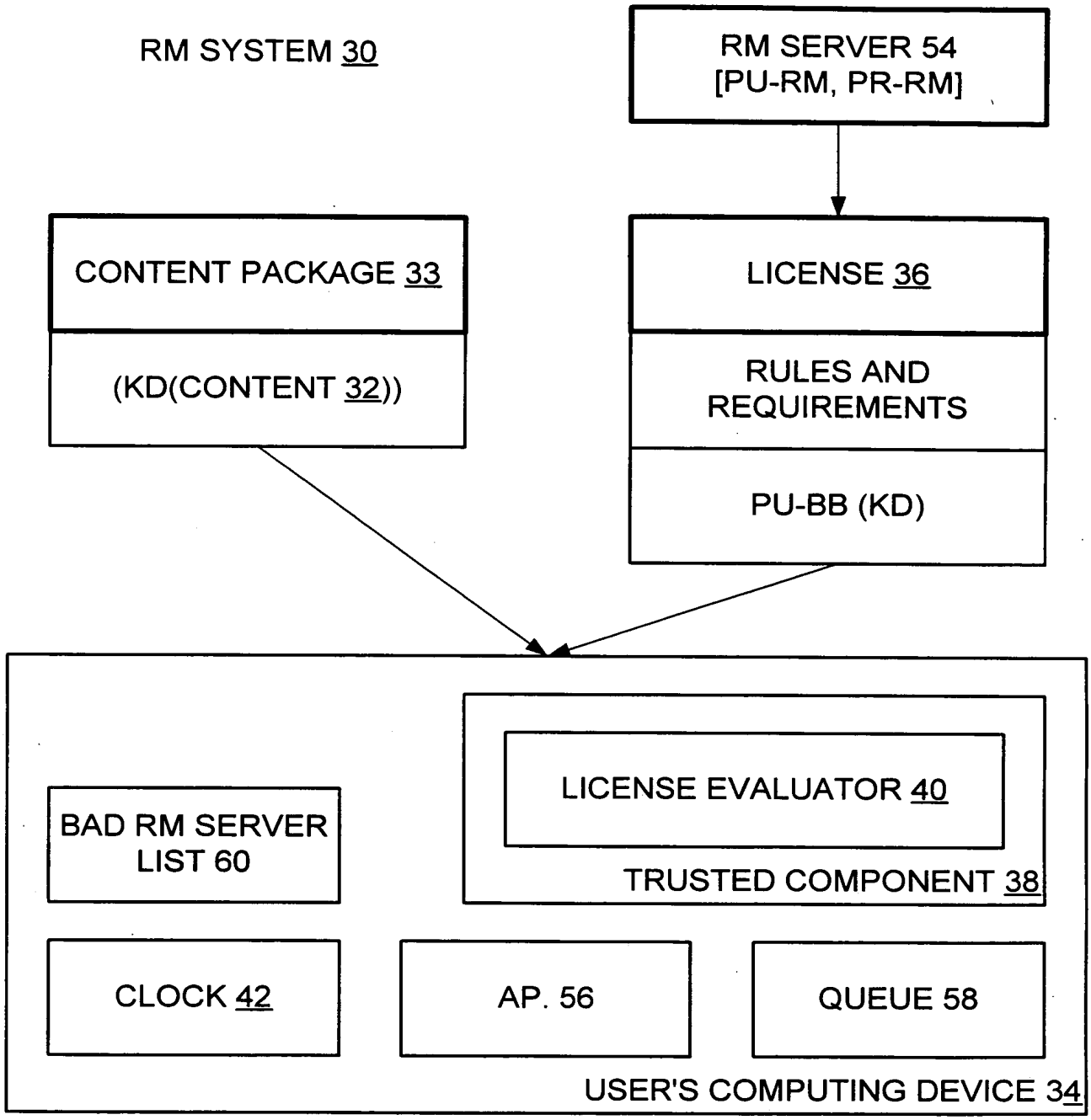
RM SYSTEM 30
RM SERVER 54
[PU-RM, PR-RM]
CONTENT PACKAGE 33
(KD(CONTENT 32))
LICENSE 36
RULES AND REQUIREMENTS
PU-BB (KD)
LICENSE EVALUATOR 40
TRUSTED COMPONENT 38
BAD RM SERVER LIST 60
CLOCK 42
AP. 56
QUEUE 58
USER'S COMPUTING DEVICE 34

Fig. 3

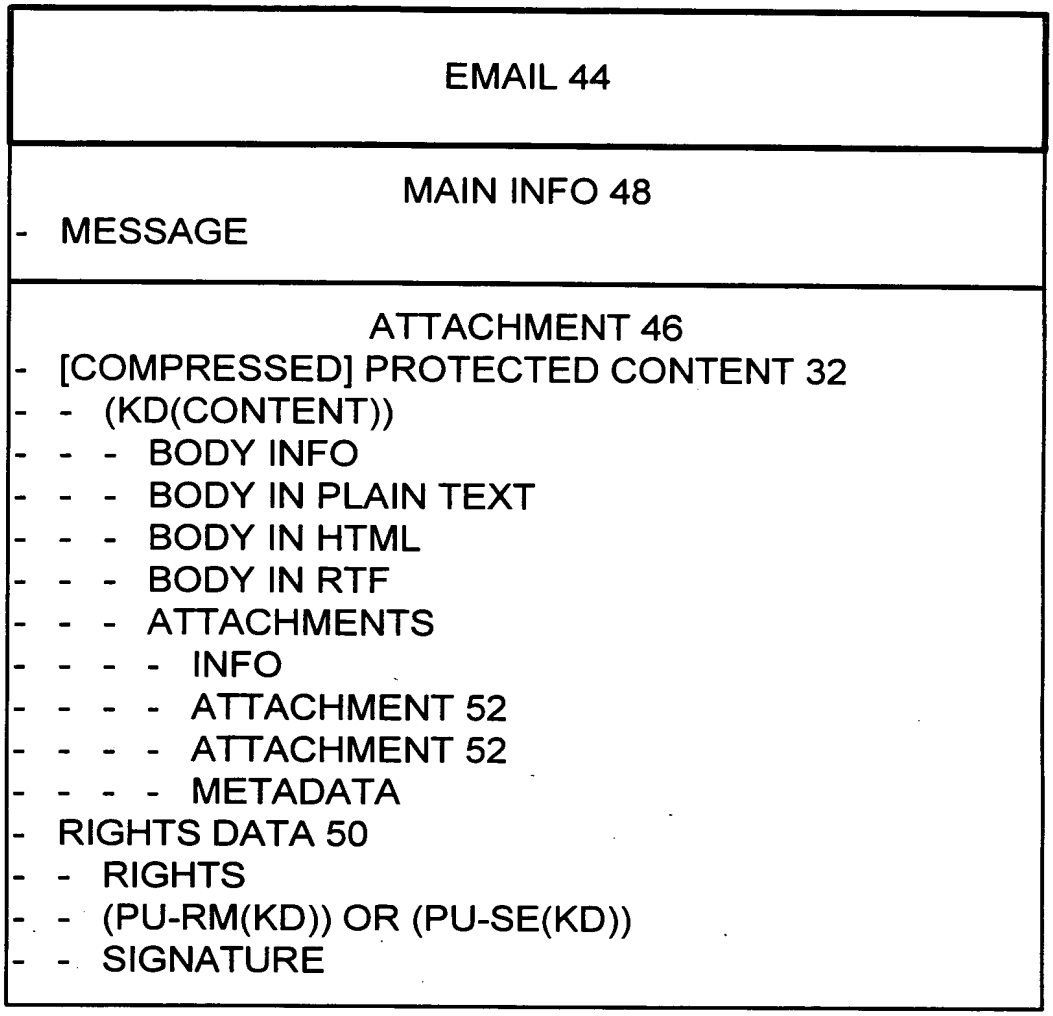
EMAIL 44
MAIN INFO 48
- MESSAGE
ATTACHMENT 46
- [COMPRESSED] PROTECTED CONTENT 32
- - (KD(CONTENT))
- - - BODY INFO
- - - BODY IN PLAIN TEXT
- - - BODY IN HTML
- - - BODY IN RTF
- - - ATTACHMENTS
- - - - INFO
- - - - ATTACHMENT 52
- - - - ATTACHMENT 52
- - - - METADATA
- RIGHTS DATA 50
- - RIGHTS
- - (PU-RM(KD)) OR (PU-SE(KD))
- - SIGNATURE

Fig. 4

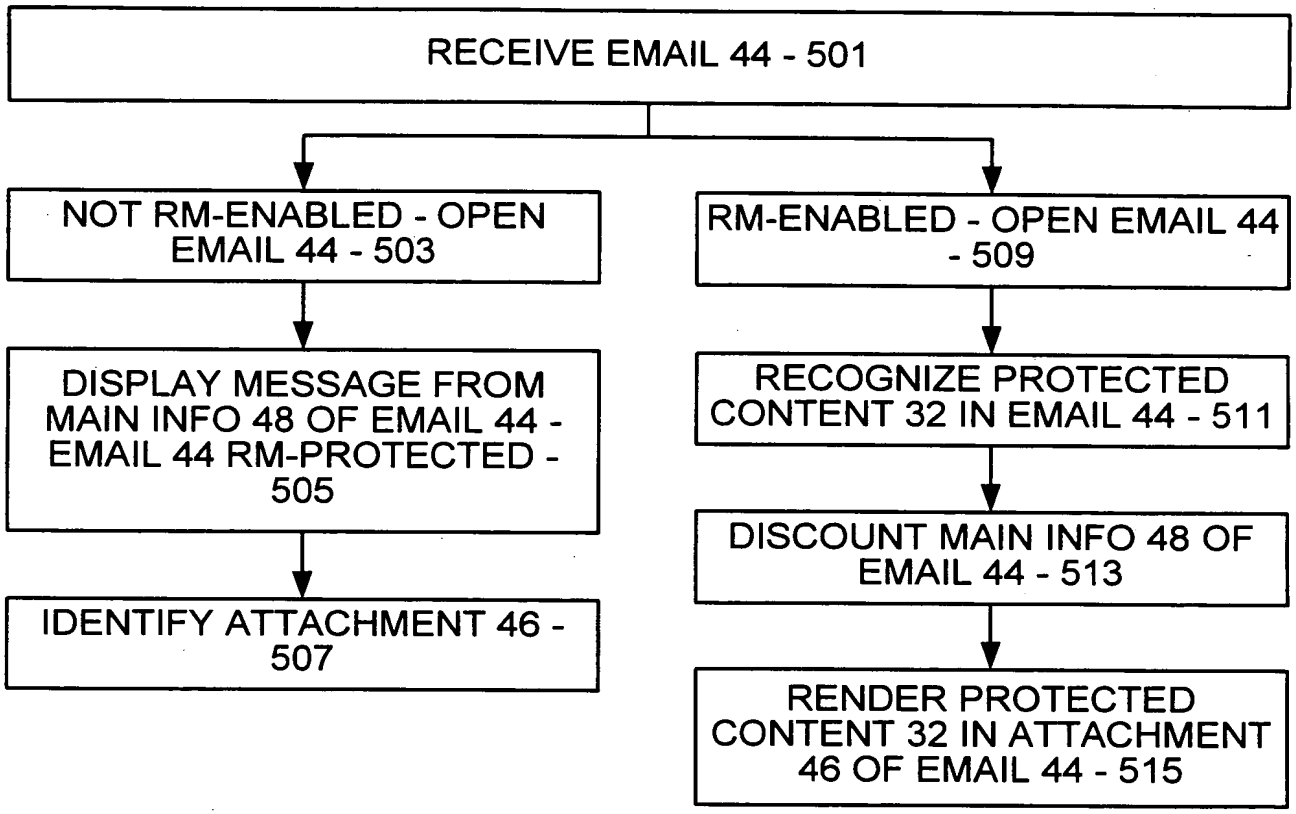
RECEIVE EMAIL 44 - 501
NOT RM-ENABLED - OPEN EMAIL 44 - 503
DISPLAY MESSAGE FROM MAIN INFO 48 OF EMAIL 44 - EMAIL 44 RM-PROTECTED - 505
IDENTIFY ATTACHMENT 46 - 507
RM-ENABLED - OPEN EMAIL 44 - 509
RECOGNIZE PROTECTED CONTENT 32 IN EMAIL 44 - 511
DISCOUNT MAIN INFO 48 OF EMAIL 44 - 513
RENDER PROTECTED CONTENT 32 IN ATTACHMENT 46 OF EMAIL 44 - 515

Fig. 5

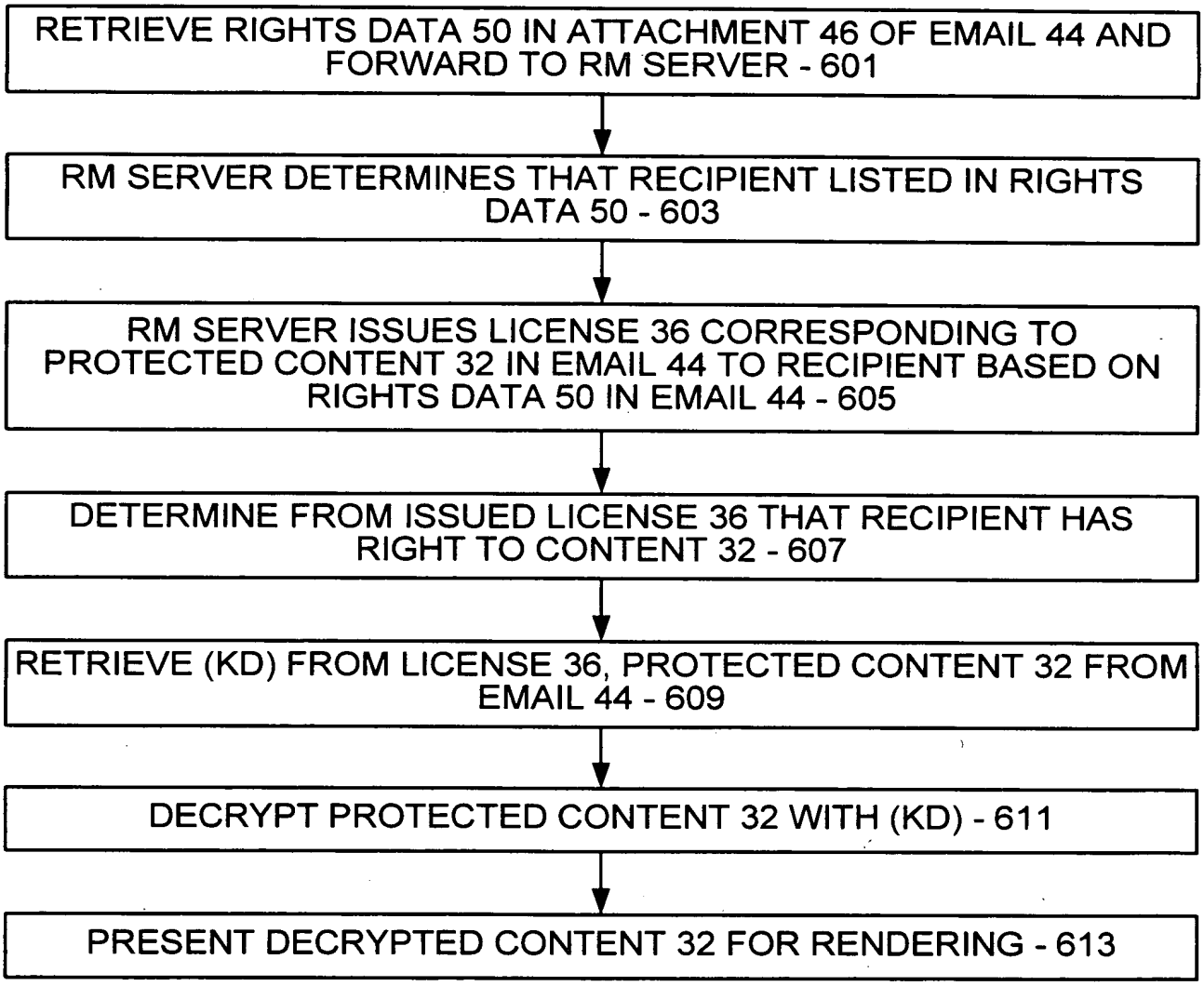
RETRIEVE RIGHTS DATA 50 IN ATTACHMENT 46 OF EMAIL 44 AND FORWARD TO RM SERVER - 601
RM SERVER DETERMINES THAT RECIPIENT LISTED IN RIGHTS DATA 50 - 603
RM SERVER ISSUES LICENSE 36 CORRESPONDING TO PROTECTED CONTENT 32 IN EMAIL 44 TO RECIPIENT BASED ON RIGHTS DATA 50 IN EMAIL 44 - 605
DETERMINE FROM ISSUED LICENSE 36 THAT RECIPIENT HAS RIGHT TO CONTENT 32 - 607
RETRIEVE (KD) FROM LICENSE 36, PROTECTED CONTENT 32 FROM EMAIL 44 - 609
DECRYPT PROTECTED CONTENT 32 WITH (KD) - 611
PRESENT DECRYPTED CONTENT 32 FOR RENDERING - 613

Fig. 6

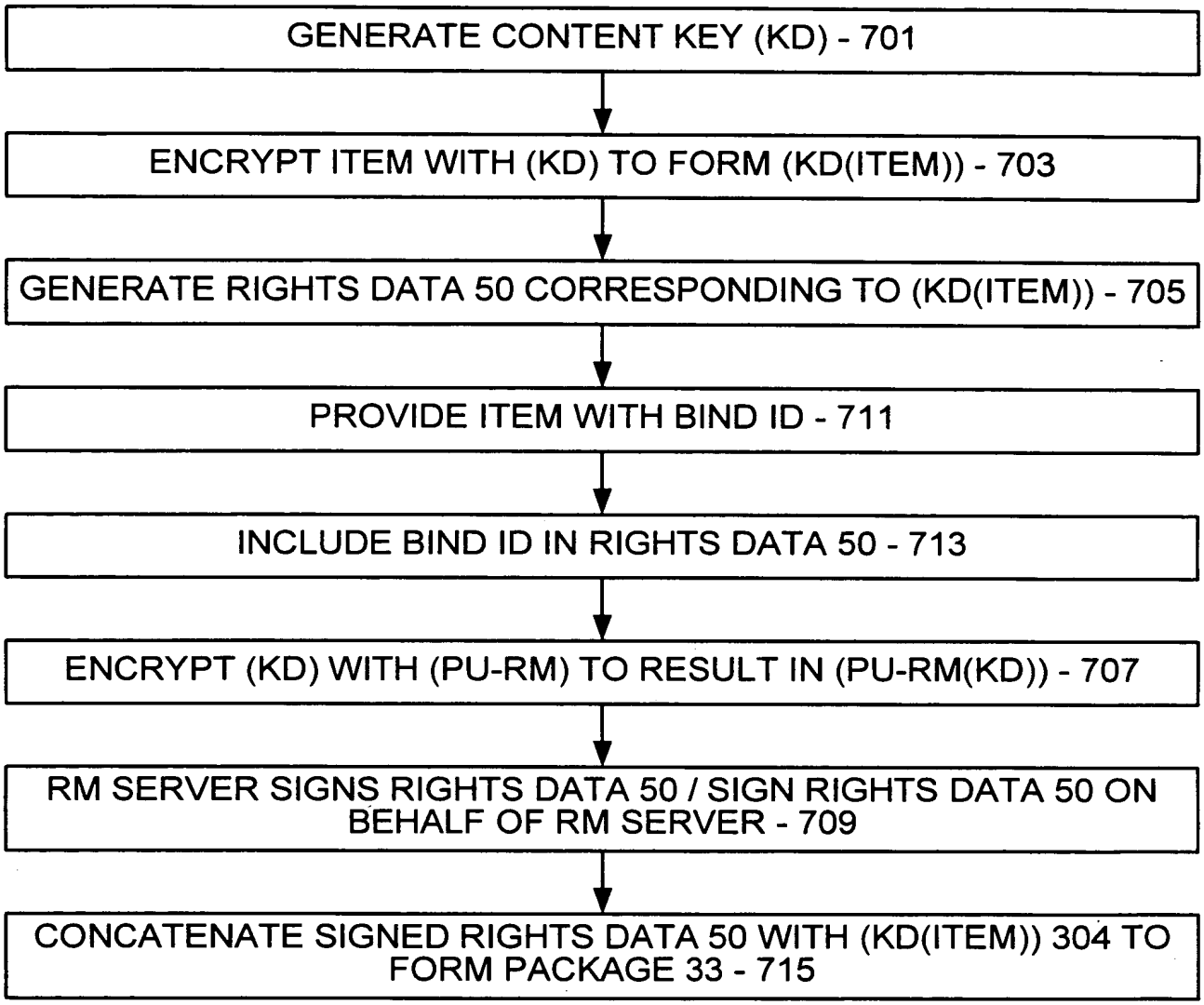
GENERATE CONTENT KEY (KD) - 701
ENCRYPT ITEM WITH (KD) TO FORM (KD(ITEM)) - 703
GENERATE RIGHTS DATA 50 CORRESPONDING TO (KD(ITEM)) - 705
PROVIDE ITEM WITH BIND ID - 711
INCLUDE BIND ID IN RIGHTS DATA 50 - 713
ENCRYPT (KD) WITH (PU-RM) TO RESULT IN (PU-RM(KD)) - 707
RM SERVER SIGNS RIGHTS DATA 50 / SIGN RIGHTS DATA 50 ON BEHALF OF RM SERVER - 709
CONCATENATE SIGNED RIGHTS DATA 50 WITH (KD(ITEM)) 304 TO FORM PACKAGE 33 - 715

Fig. 7

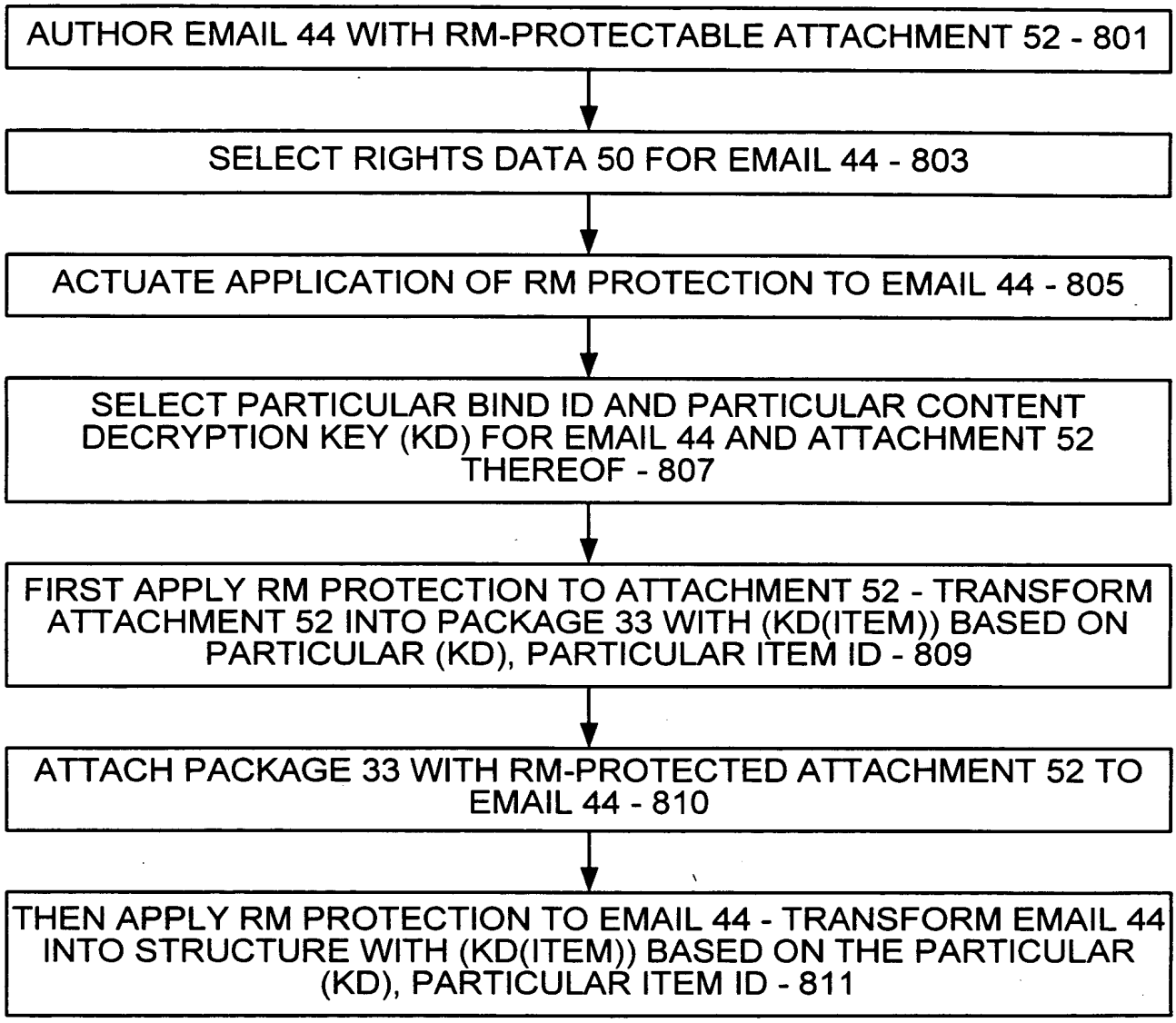
AUTHOR EMAIL 44 WITH RM-PROTECTABLE ATTACHMENT 52 - 801
SELECT RIGHTS DATA 50 FOR EMAIL 44 - 803
ACTUATE APPLICATION OF RM PROTECTION TO EMAIL 44 - 805
SELECT PARTICULAR BIND ID AND PARTICULAR CONTENT DECRYPTION KEY (KD) FOR EMAIL 44 AND ATTACHMENT 52 THEREOF - 807
FIRST APPLY RM PROTECTION TO ATTACHMENT 52 - TRANSFORM ATTACHMENT 52 INTO PACKAGE 33 WITH (KD(ITEM)) BASED ON PARTICULAR (KD), PARTICULAR ITEM ID - 809
ATTACH PACKAGE 33 WITH RM-PROTECTED ATTACHMENT 52 TO EMAIL 44 - 810
THEN APPLY RM PROTECTION TO EMAIL 44 - TRANSFORM EMAIL 44 INTO STRUCTURE WITH (KD(ITEM)) BASED ON THE PARTICULAR (KD), PARTICULAR ITEM ID - 811

Fig. 8

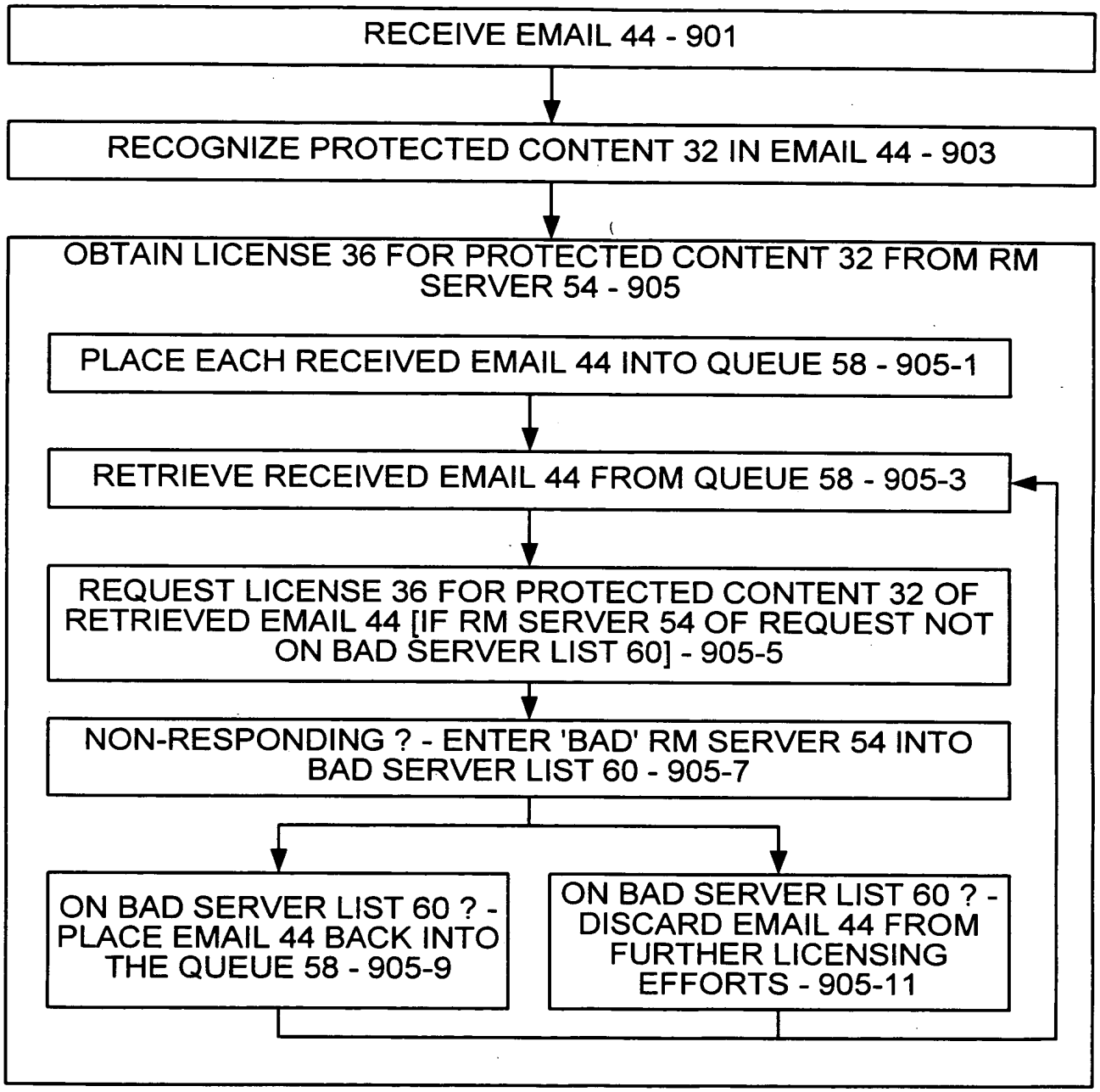
RECEIVE EMAIL 44 - 901
RECOGNIZE PROTECTED CONTENT 32 IN EMAIL 44 - 903
OBTAIN LICENSE 36 FOR PROTECTED CONTENT 32 FROM RM SERVER 54 - 905
PLACE EACH RECEIVED EMAIL 44 INTO QUEUE 58 - 905-1
RETRIEVE RECEIVED EMAIL 44 FROM QUEUE 58 - 905-3
REQUEST LICENSE 36 FOR PROTECTED CONTENT 32 OF RETRIEVED EMAIL 44 [IF RM SERVER 54 OF REQUEST NOT ON BAD SERVER LIST 60] - 905-5
NON-RESPONDING ? - ENTER 'BAD' RM SERVER 54 INTO BAD SERVER LIST 60 - 905-7
ON BAD SERVER LIST 60 ? - PLACE EMAIL 44 BACK INTO THE QUEUE 58 - 905-9
ON BAD SERVER LIST 60 ? - DISCARD EMAIL 44 FROM FURTHER LICENSING EFFORTS - 905-11

Fig. 9

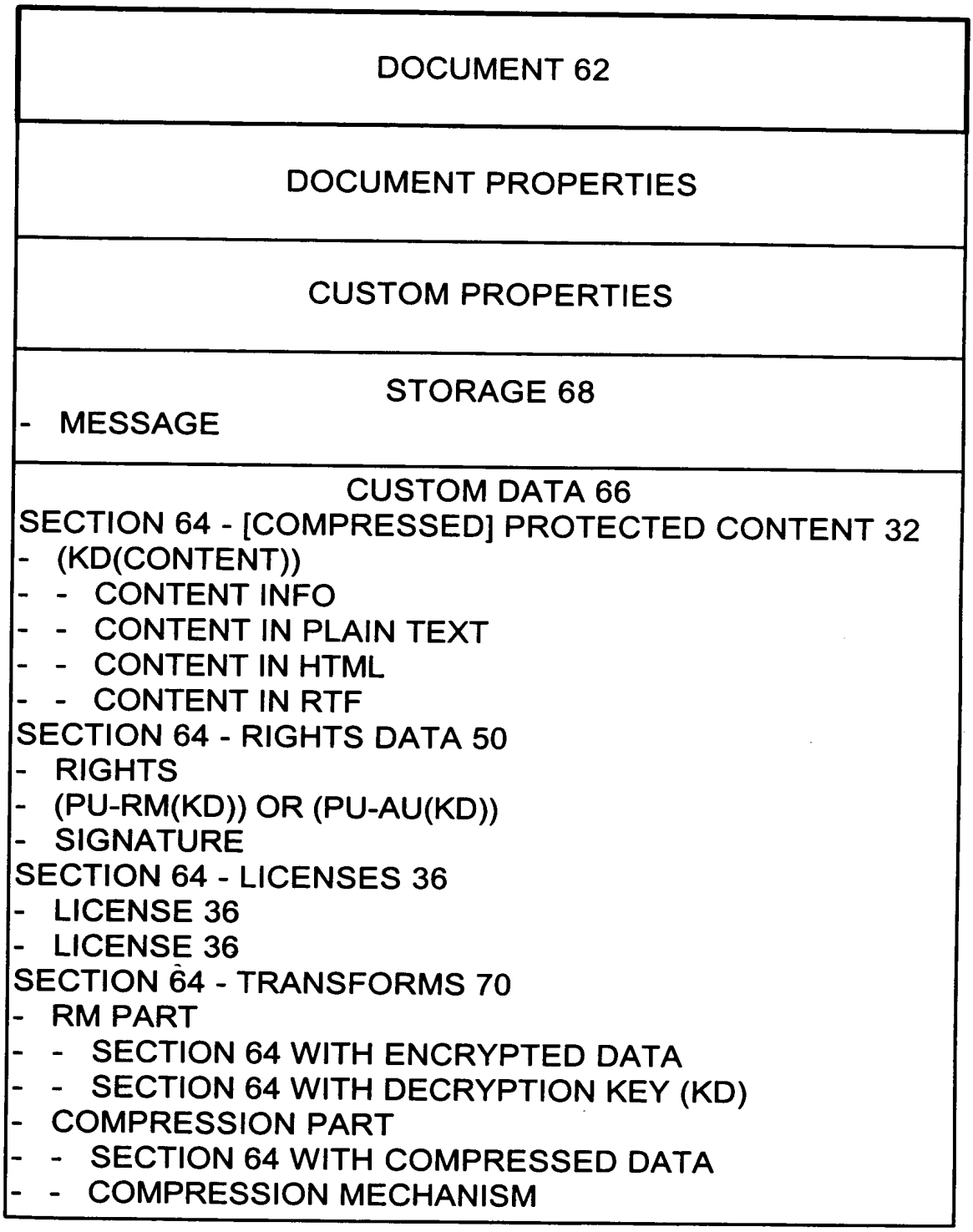
DOCUMENT 62
DOCUMENT PROPERTIES
CUSTOM PROPERTIES
STORAGE 68
- MESSAGE
CUSTOM DATA 66
SECTION 64 - [COMPRESSED] PROTECTED CONTENT 32
- (KD(CONTENT))
- - CONTENT INFO
- - CONTENT IN PLAIN TEXT
- - CONTENT IN HTML
- - CONTENT IN RTF
SECTION 64 - RIGHTS DATA 50
- RIGHTS
- (PU-RM(KD)) OR (PU-AU(KD))
- SIGNATURE
SECTION 64 - LICENSES 36
- LICENSE 36
- LICENSE 36
SECTION 64 - TRANSFORMS 70
- RM PART
- - SECTION 64 WITH ENCRYPTED DATA
- - SECTION 64 WITH DECRYPTION KEY (KD)
- COMPRESSION PART
- - SECTION 64 WITH COMPRESSED DATA
- - COMPRESSION MECHANISM

Fig. 10

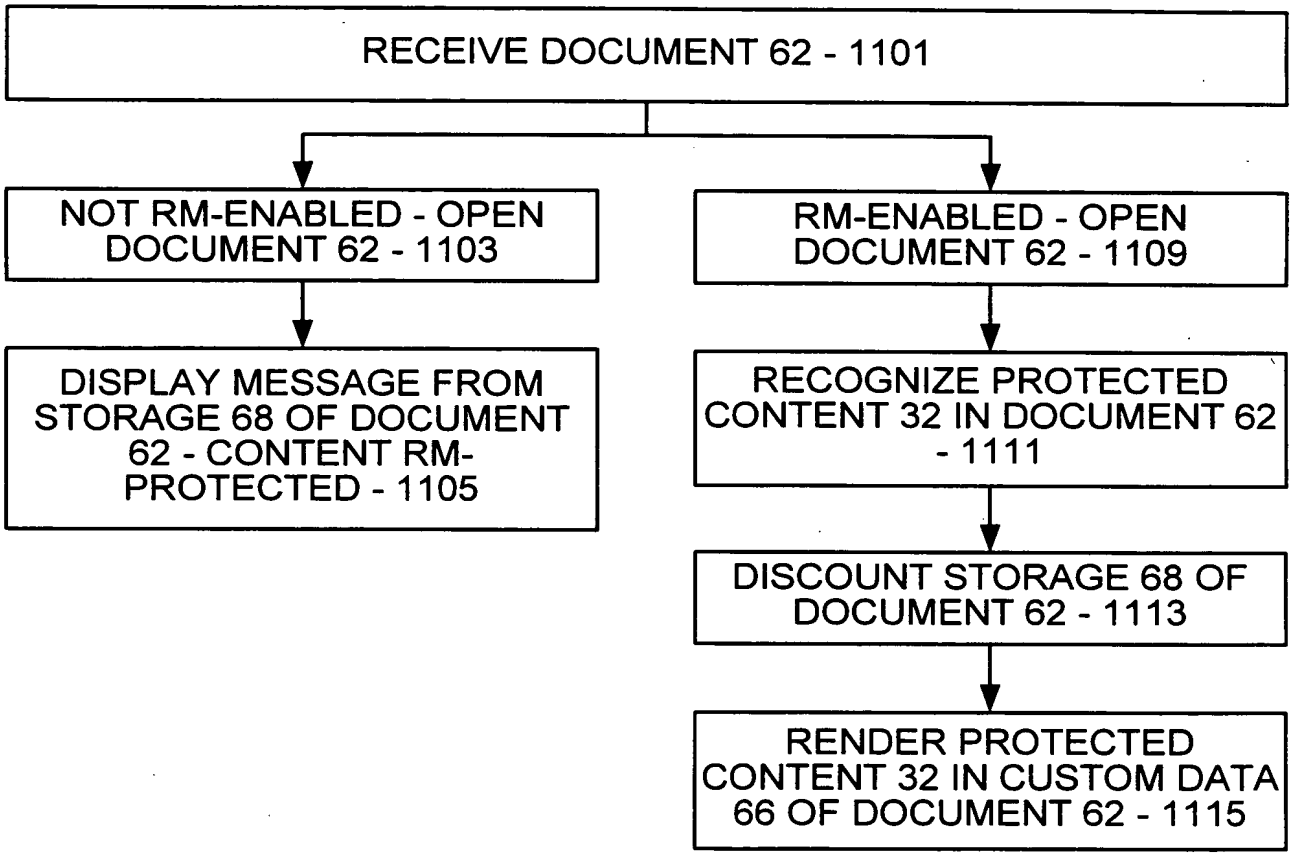
RECEIVE DOCUMENT 62 - 1101
NOT RM-ENABLED - OPEN DOCUMENT 62 - 1103
DISPLAY MESSAGE FROM STORAGE 68 OF DOCUMENT 62 - CONTENT RM-PROTECTED - 1105
RM-ENABLED - OPEN DOCUMENT 62 - 1109
RECOGNIZE PROTECTED CONTENT 32 IN DOCUMENT 62 - 1111
DISCOUNT STORAGE 68 OF DOCUMENT 62 - 1113
RENDER PROTECTED CONTENT 32 IN CUSTOM DATA 66 OF DOCUMENT 62 - 1115

Fig. 11

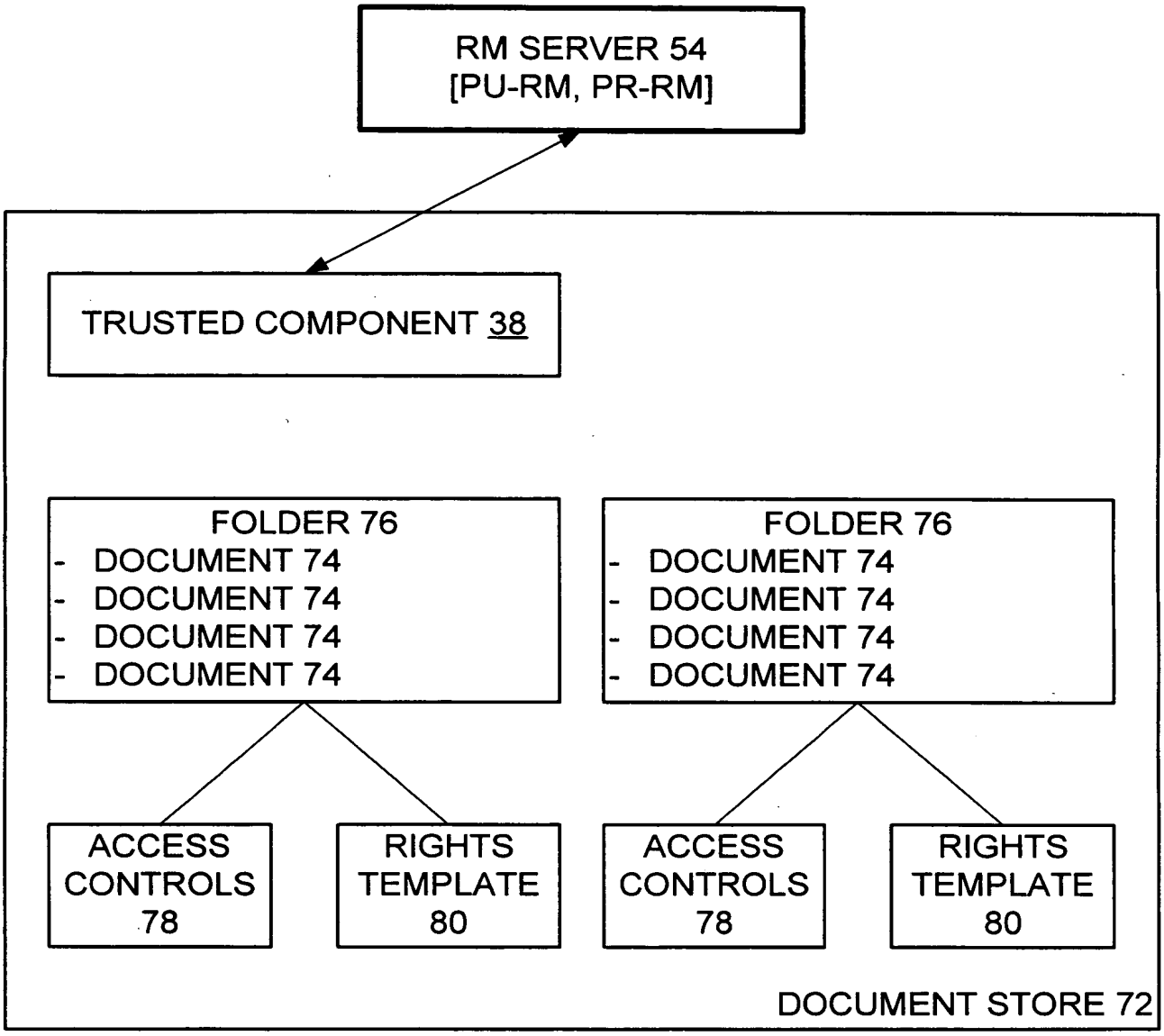
RM SERVER 54
[PU-RM, PR-RM]
TRUSTED COMPONENT 38
FOLDER 76
- DOCUMENT 74
- DOCUMENT 74
- DOCUMENT 74
- DOCUMENT 74
FOLDER 76
- DOCUMENT 74
- DOCUMENT 74
- DOCUMENT 74
- DOCUMENT 74
ACCESS CONTROLS 78
RIGHTS TEMPLATE 80
ACCESS CONTROLS 78
RIGHTS TEMPLATE 80
DOCUMENT STORE 72

Fig. 12

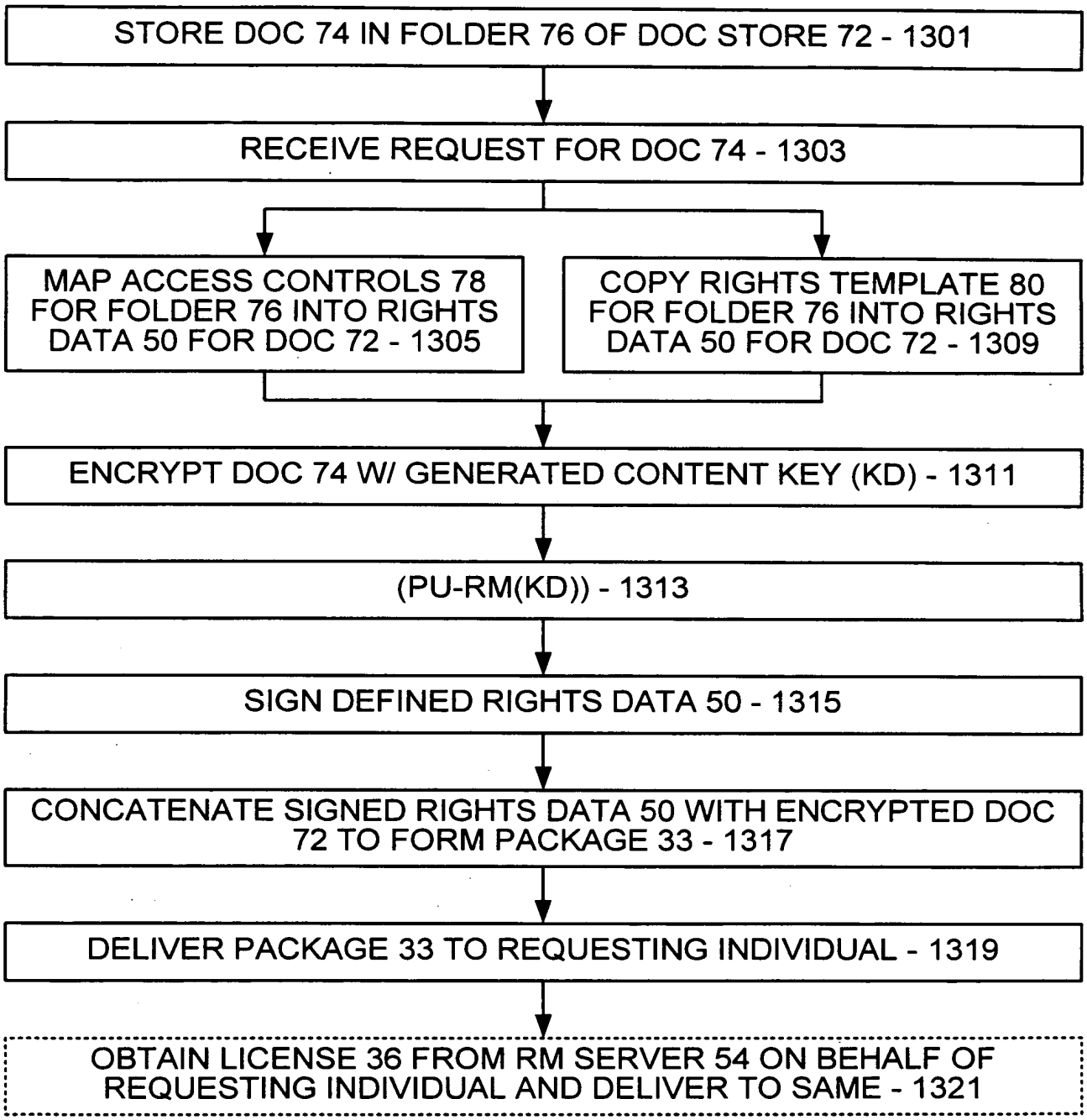
STORE DOC 74 IN FOLDER 76 OF DOC STORE 72 - 1301
RECEIVE REQUEST FOR DOC 74 - 1303
MAP ACCESS CONTROLS 78 FOR FOLDER 76 INTO RIGHTS DATA 50 FOR DOC 72 - 1305
COPY RIGHTS TEMPLATE 80 FOR FOLDER 76 INTO RIGHTS DATA 50 FOR DOC 72 - 1309
ENCRYPT DOC 74 W/ GENERATED CONTENT KEY (KD) - 1311
(PU-RM(KD)) - 1313
SIGN DEFINED RIGHTS DATA 50 - 1315
CONCATENATE SIGNED RIGHTS DATA 50 WITH ENCRYPTED DOC 72 TO FORM PACKAGE 33 - 1317
DELIVER PACKAGE 33 TO REQUESTING INDIVIDUAL - 1319
OBTAIN LICENSE 36 FROM RM SERVER 54 ON BEHALF OF REQUESTING INDIVIDUAL AND DELIVER TO SAME - 1321

Fig. 13

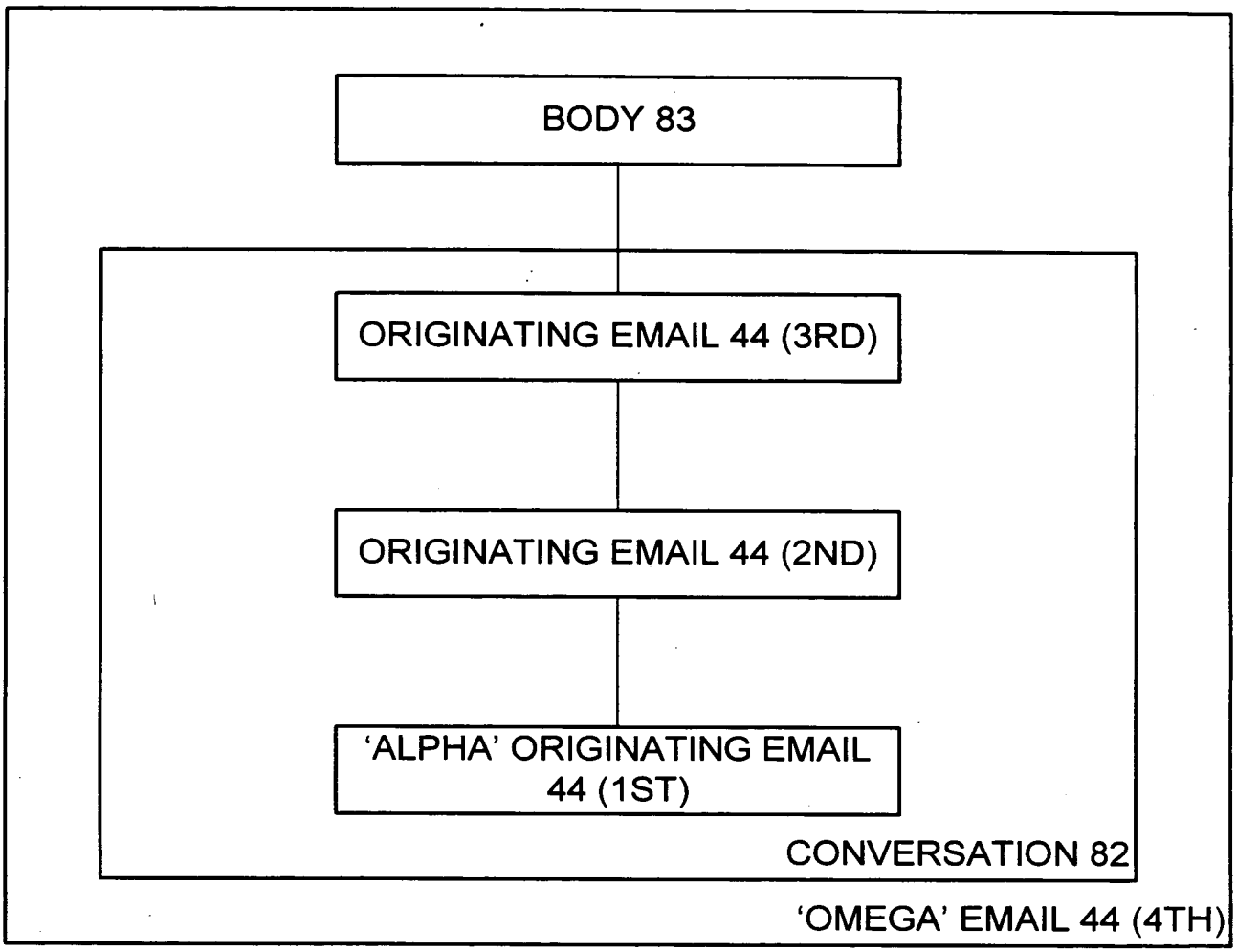
BODY 83
ORIGINATING EMAIL 44 (3RD)
ORIGINATING EMAIL 44 (2ND)
'ALPHA' ORIGINATING EMAIL 44 (1ST)
CONVERSATION 82
'OMEGA' EMAIL 44 (4TH)

Fig. 14

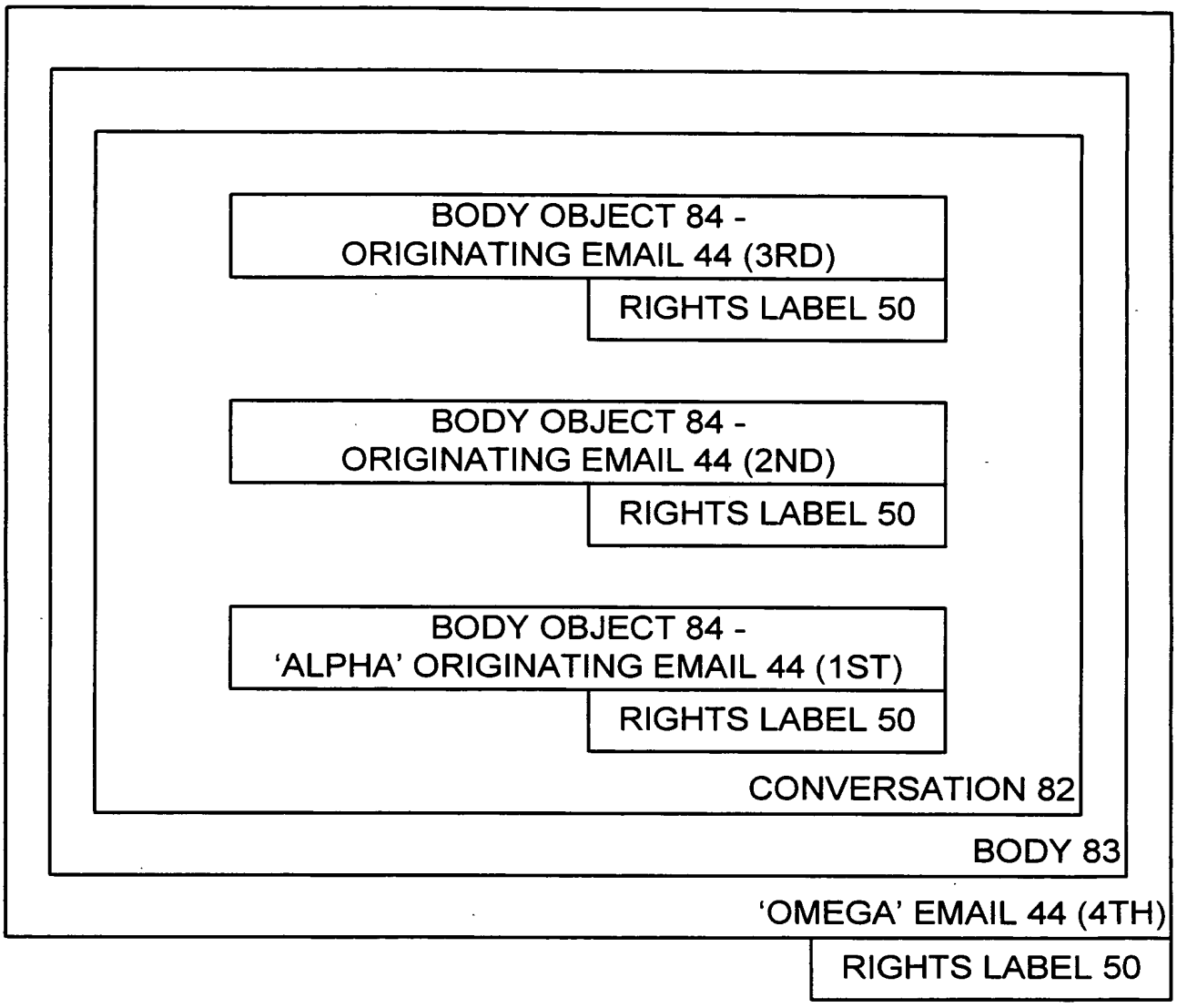
BODY OBJECT 84 -
ORIGINATING EMAIL 44 (3RD)
RIGHTS LABEL 50
BODY OBJECT 84 -
ORIGINATING EMAIL 44 (2ND)
RIGHTS LABEL 50
BODY OBJECT 84 -
'ALPHA' ORIGINATING EMAIL 44 (1ST)
RIGHTS LABEL 50
CONVERSATION 82
BODY 83
'OMEGA' EMAIL 44 (4TH)
RIGHTS LABEL 50

Fig. 15

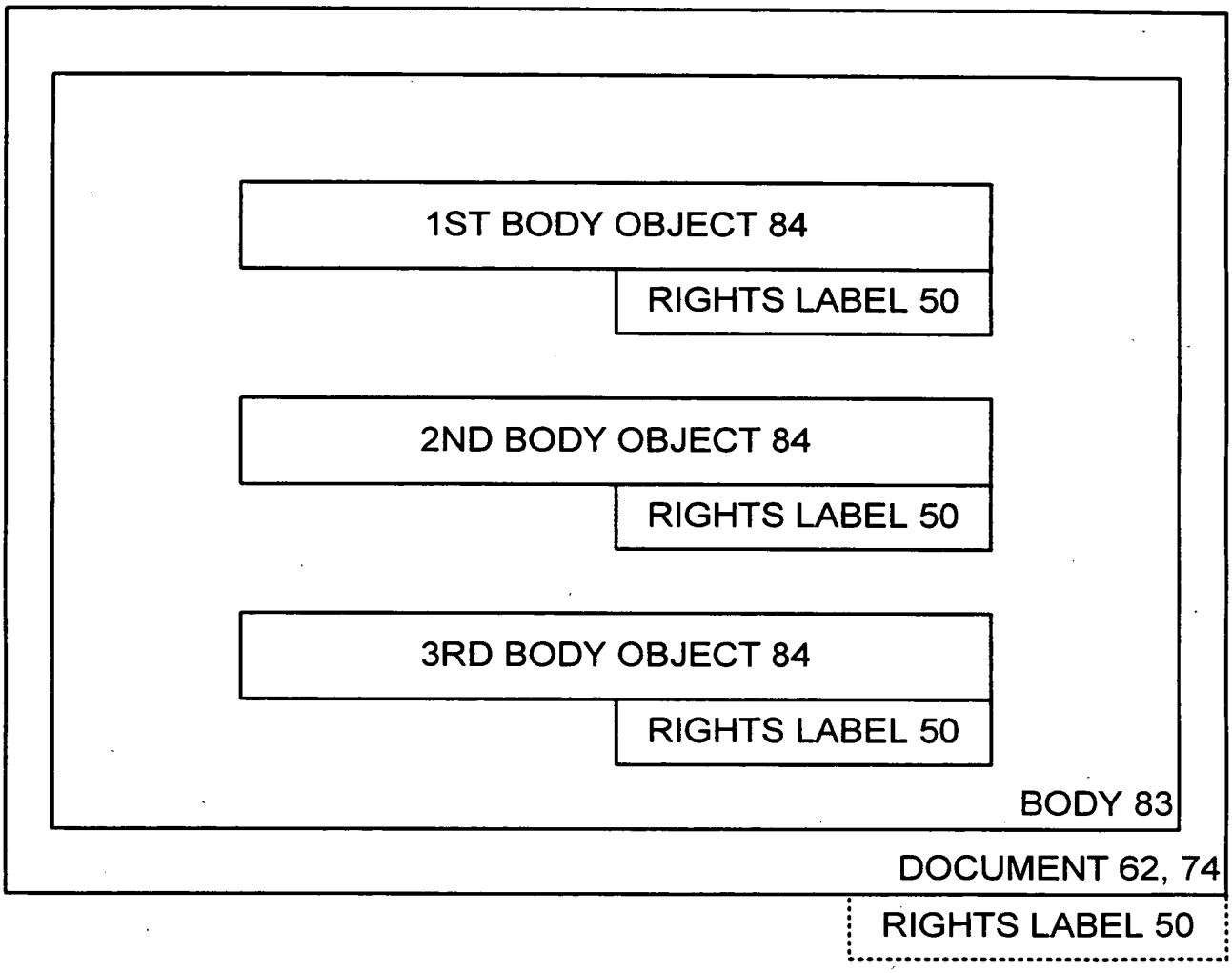
1ST BODY OBJECT 84
RIGHTS LABEL 50
2ND BODY OBJECT 84
RIGHTS LABEL 50
3RD BODY OBJECT 84
RIGHTS LABEL 50
BODY 83
DOCUMENT 62, 74
RIGHTS LABEL 50

Fig. 16

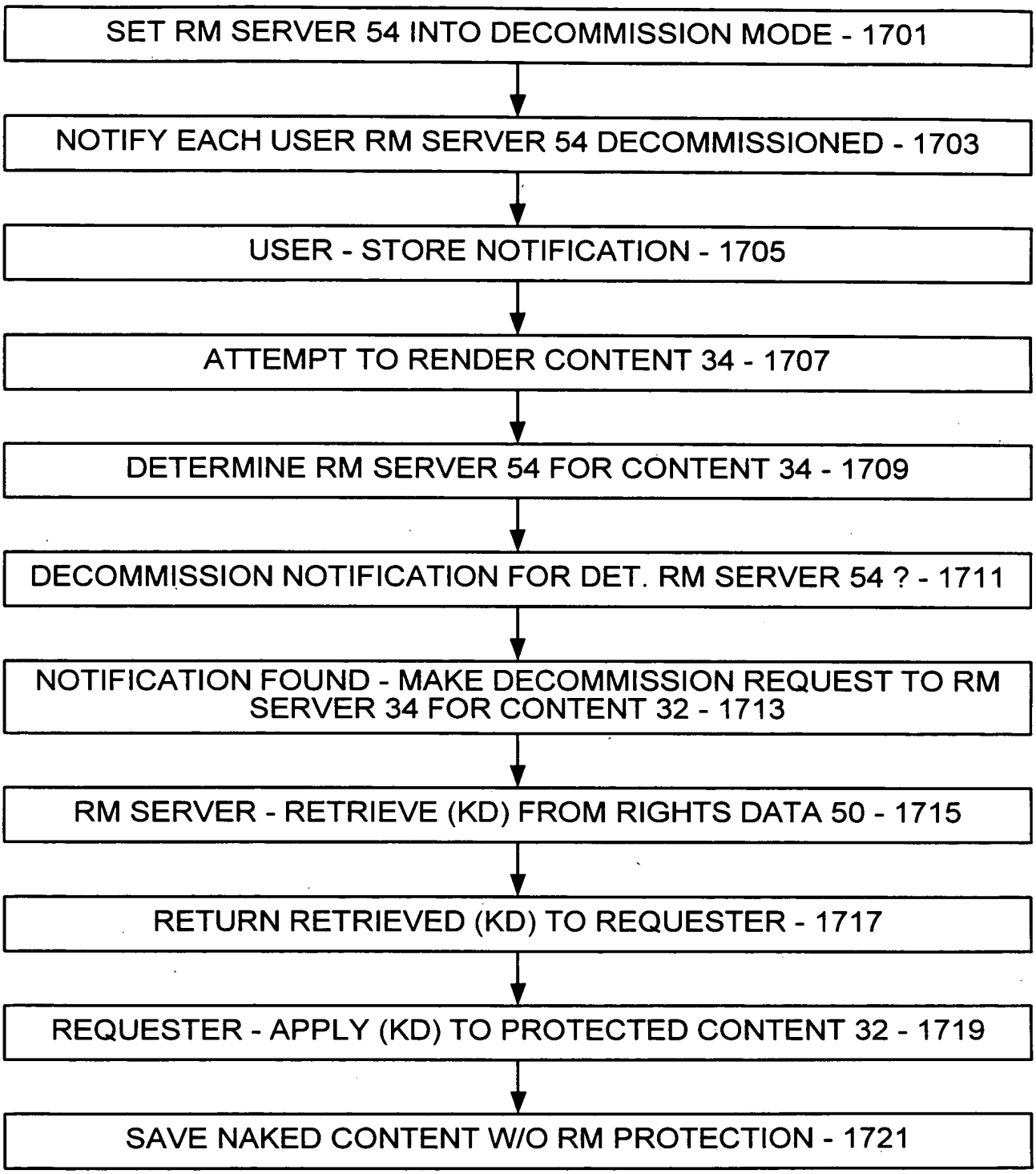
SET RM SERVER 54 INTO DECOMMISSION MODE - 1701
NOTIFY EACH USER RM SERVER 54 DECOMMISSIONED - 1703
USER - STORE NOTIFICATION - 1705
ATTEMPT TO RENDER CONTENT 34 - 1707
DETERMINE RM SERVER 54 FOR CONTENT 34 - 1709
DECOMMISSION NOTIFICATION FOR DET. RM SERVER 54 ? - 1711
NOTIFICATION FOUND - MAKE DECOMMISSION REQUEST TO RM SERVER 34 FOR CONTENT 32 - 1713
RM SERVER - RETRIEVE (KD) FROM RIGHTS DATA 50 - 1715
RETURN RETRIEVED (KD) TO REQUESTER - 1717
REQUESTER - APPLY (KD) TO PROTECTED CONTENT 32 - 1719
SAVE NAKED CONTENT W/O RM PROTECTION - 1721

Fig. 17